

323 Williams Street • Suite D • Bel Air, MD 21014

410-838-8780 • fax: 410-838-8740 • www.emflux.com

July 14, 2005

Mr. Stephen Trent Fluor Hanford, Inc. 1200 Jadwin Avenue Richland, WA 99352

Subj: Sample Delivery Groups BEACON0002 and BEACON0003

EMFLUX Passive Soil-Gas Survey Data Report

200-PW-1 Operable Unit Soil Gas Sampling and Analysis

Contract No. 26796

Dear Mr. Trent:

Enclosed is the data report from the analyses of the samples from the subject project, which were submitted to BEACON on June 8, 2005 (BEACON0002) and July 8, 2005 (BEACON0003). Please contact me if you have any questions or comments concerning the enclosures. An electronic data deliverable was previously submitted electronically.

Thank you for the opportunity to provide services to Fluor Hanford. We look forward to continuing to support you on this project. If I can be of any further assistance, please do not he sitate to call.

Sincerely,

BEACON Environmental Services, Inc.

Steve Thornley Laboratory Director

Encl(s)

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7/19/05 Dayes





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<u>DATE</u> 7/14/2005 INVOICE NO. 050714-02

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PO Box 1000

Richland WA 99352

Beacon Environmental Services, Inc. 323 Williams Street, Ste. D

Bel Air, MD 21014 Federal ID No. 52-2143477

PROJECT NO.	PROJECT NAME	P.O./CON	TRACT NO.	TERMS
EM1770	Passive Soil-Gas Survey	26	796	Net 30
ITEM CODE	DESCRIPTION	QTY	RATE	AMOUNT
01 010	Passive Soil-Gas Survey Sampling Task No. 3 200-PW-1 Operable Unit Groundwater Protection Program Richland, WA Management and Integration Contract DE-AC06-96RL13200 Technical Representative: Mr. Stephen Trent BEACON Representative Mr. Harry O'Neill 410-838-8780 x113	1	21,060.00	21,060.00

Interest will be charged at the rate of 1.5% per month on any past due balance. Thank you for your business. Please call if you have any questions.

Total

\$21,060.00

BEACON Report No. EM1770 Task 3

PASSIVE SOIL VAPOR SAMPLING AND ANALYSIS SAMPLING TASK NO. 3 200-PW-1 OPERABLE UNIT

GROUNDWATER PROTECTION PROJECT RICHLAND, WA

Management and Integration Contract DE-AC06-96RL13200

Prepared for

Fluor Hanford 1200 Jadwin Avenue Richland, WA 99352

by





Beacon Environmental Services, Inc. 323 Williams Street Suite D Bel Air, MD 21014

July 14, 2005

Applying Results from Soil-Gas Surveys

The utility of soil-gas surveys is directly proportional to their accuracy in reflecting and representing changes in the subsurface concentrations of source compounds. Passive soil-gas survey results are the mass collected from the vapor-phase emanating from the source. The vapor-phase is merely a fractional trace of the source, so, as a matter of convenience, the units used in reporting detection values from passive soil-gas surveys are smaller than those employed for source-compound concentrations.

The critical fact is that, whatever the relative concentrations of source and associated soil gas, best results are realized when the ratio of soil-gas measurements to actual subsurface concentrations remains as close to constant as the real world permits. It is the reliability and consistency of this ratio, not the particular units of mass (e.g., nanograms) that determine usefulness. Thus, BEACON emphasizes the necessity of conducting — at minimum — follow-on intrusive sampling at one or two points that show relatively high soil-gas measurements to obtain corresponding concentrations of soil and groundwater contaminants. These correspondent values furnish the basis for approximating the required ratio. Once that ratio is established, it can be used in conjunction with the soil-gas measurements (regardless of the units adopted) to estimate subsurface contaminant concentrations across the survey field. It is important to keep in mind, however, that specific conditions at individual sample points, including soil porosity and permeability, depth to contamination, and perched ground water, can have significant impact on soil-gas measurements at those locations.

When passive soil-gas surveys are handled in this way, the data provide information that can yield substantial savings in drilling costs and in time. They furnish, among other things, a checklist of compounds expected at each survey location and help to determine how and where drilling budgets can most effectively be spent.

BEACON Report Number: EM1770 Task 1

Passive Soil-Gas Survey 200-PW-1 Operable Unit Hanford, WA

This Passive Soil-Gas Survey Report has been prepared for Fluor Hanford, Inc. (FLUOR HANFORD) by Beacon Environmental Services, Inc. (BEACON) in accordance with the terms of Management and Integration Contract DE-AC06-96RL13200. BEACON's principal technical contacts at FLUOR HANFORD for this project have been Mr. Steve Trent and Mr. Philip Gent. Passive soil-gas samples were collected following the protocols of the EMFLUX® Passive Soil-Gas Sampling System.

1. Objectives

Soil-gas samples were collected to screen the 218-W-3A Burial Ground, T-Plant, and 216 Z-Trench sites for the presence of targeted compounds in the gas phase. Results will be used to profile contamination in soil and/or ground water at the site, thereby determining the distribution and relative strength of detected contaminants.

2. Target Compounds

This survey targeted the 16 compounds listed in Table 1, which supplies the resulting laboratory data in nanograms (ng) of specific compound per cartridge.

3. Survey Description

•	No. of Field Sample Points:	109
•	No. of Duplicate Field Samples:	5
•	No. of Trip Blanks:	<u>_6</u>
•	Total No. of Samples:	120

4. Field Work

FLUOR HANFORD was provided a Field Kit with the equipment needed to conduct a 116-point passive soil-gas survey. Samplers for 216 Z-Trench and T-Plant sites were deployed on May 26, 2005, and were retrieved on June 1, 2005. Samplers for 218-W-3A Burial Ground were deployed on June 30, 2005, and were retrieved on July 5, 2005. Attachment 1 describes the field procedures used. Individual deployment and retrieval times will be found in the Field Deployment Report (Attachment 2).

5. Analysis and Reporting Dates

- BEACON's laboratory received 95 samples from the 216 Z-Trench and T-Plant sites for analysis on June 8, 2005. BEACON's laboratory completed the analyses on June 11, 2005. Following a laboratory review, results were provided to FLUOR HANFORD on June 14, 2005.
- BEACON's laboratory received 25 samples from the 218-W-3A Burial Ground site for analysis on July 8, 2005. BEACON's laboratory completed the analyses on July 13, 2005.
- Adsorbent cartridges from the passive samplers were thermally desorbed, then analyzed
 using gas chromatography/mass spectrometry (GC/MS) equipment, in accordance with
 EPA Method 8260B (Modified), as described in Attachment 3. BEACON's laboratory
 analyzed each cartridge for the targeted compounds.

6. Report Notes and Quality Assurance/Quality Control Factors

- Table 1 provides survey results in nanograms per cartridge by sample-point number and compound name. The quantitation levels represent values above which quantitative laboratory results can be achieved within specified limits of precision and with a high degree of confidence. The quantitation level for each compound, therefore, provides a reliable basis for comparing the relative strength of any detection of that compound.
- Data Compatibility. It is important to note that when sample locations are covered with or near the edge of an artificial surface (e.g., asphalt or concrete), sample measurements are often distorted (increased) significantly. Such distortion can be attributed to the fact that gas rising from sources beneath impermeable caps tends to reach equilibrium underneath the cap. Thus, a reading taken below or near an impermeable surface is much higher than it would be in the absence of such a cap.
- The Chain-of-Custody form, which was shipped with the samples for this survey, is supplied as Attachment 4.
- Laboratory QA/QC procedures included standards, surrogates, and blanks appropriate
 to EPA Method 8260 (Modified). Field work, analyses, and reporting were done in
 accordance with BEACON's Quality Assurance Program Plan.

- QA/QC Contaminant Corrections. Following EPA guidelines, laboratory data is not corrected for method blank or trip blank sample contamination values; any contamination detected on QA/QC samples is reported in Table 1.
- Laboratory method blanks are run each day with project samples to identify
 contamination present in the laboratory. If contamination is detected on a method blank,
 measurements of identical compounds on samples analyzed the same day are considered to
 be suspect and are flagged in the laboratory report. The laboratory method blanks
 analyzed in connection with the present samples revealed no contamination.
- The trip blank is a sampling cartridge prepared, transported, and analyzed with other samples but intentionally not exposed. Any target compounds identified on the trip blanks are reported in the laboratory data. The analysis of the trip blanks (labeled Trip-3 through Trip-8 in Table 1) reported none of the targeted compounds, indicating that the survey site itself is the source of detected contamination.

[Note: Soil-gas samples were collected previously in support of the Groundwater Protection Project at Hanford. The trip blanks that accompanied those samples were labeled Trip-1 and Trip-2]

- Survey findings are relative exclusively to this project and should not routinely be compared with results of other BEACON Surveys. To establish a relationship between reported soil-gas measurements and actual subsurface contaminant concentrations, which will indicate those detections representing significant subsurface contamination, BEACON recommends the guidelines on the inside front cover of this report.
- The following Attachments are included:
 - -1- Field Procedures
 - -2- Field Deployment Report
 - -3- Laboratory Procedures
 - -4- Chain-of-Custody Form

EM1770 Task 3

Table 1

Our Phon Beacon Environmental Services, Inc.

323 Williams Street, Ste. D

Bel Air, MD 21014

Client Sample ID:	B1D844	B1D845	B1D846	B1D847	Meth_Blk	B1DDW5
Project Number:	EM1770	EM1770	EM1770	EM1770	EM1770	EM1770
Lab File ID:	05061016	05061017	05061018	05061019	05071206	05071207
Received Date:	6/8/2005	6/8/2005	6/8/2005	6/8/2005		7/8/2005
Analysis Date:	6/11/2005	6/11/2005	6/11/2005	6/11/2005	7/12/2005	7/12/2005
Analysis Time:	2:34	3:05	3:35	4:06	12:20	12:51
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS						_
Chloroethane	<25	<25	<25	<25	<25	<25
Chloromethane	<25	⋖ 5	<25	<25	<25	< 25
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
Methylene Chloride	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<2 5	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25 ⋅	<25	<25	<25	<2.5	<25
		•				
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	⊘ 25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Dibromochloromethane	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Client Sample ID:	B1DDW6	B1DDW7	BIDDW8	B1DDW9	B1DDX0	BIDDXI
Project Number:	EM1770	EM1770	EM1770	EM1770	EM1770	EM1770
Lab File ID:	05071208	05071209	05071210	05071211	05071212	05071213
Received Date:	7/8/2005	7/8/2005	7/8/2005	7/8/2005	7/8/2005	7/8/2005
Analysis Date:	7/12/2005	7/12/2005	7/12/2005	7/12/2005	7/12/2005	7/12/2005
Analysis Time:	13:21	13:52	14:23	14:53	15:24	15:55
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS						
Chloroethane	<25	<25	<25	<25	<25	<25
Chloromethane	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
Methylene Chloride	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	⊘ 5	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	58	<25	58	88
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Dibromochloromethane	<25	<25	<25	<25	<25	<25
Tetrachloroethene	⊘ 5	26	294	<25	<25	<25

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D

Bel Air, MD 21014

Client Sample ID:	B1DDX2	B1DDX3	B1DDX4	B1DDX5	B1DDX6	B1DDX7
Project Number:	EM1770	EM1770	EM1770	EM1770	EM1770	EM1770
Lab File ID:	05071214	05071215	05071216	05071217	05071218	05071219
Received Date:	7/8/2005	7/8/2005	7/8/2005	7/8/2005	7/8/2005	7/8/2005
Analysis Date:	7/12/2005	7/12/2005	7/12/2005	7/12/2005	7/12/2005	7/12/2005
Analysis Time:	16:26	16:57	17:27	17:57	18:28	18:59
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS	·					
Chloroethane	<25	<25	<25	<25	<25	<25
Chloromethane	<2.5	<25	<25	<25	<25	<25
1,1-Dichloroethene	<25	<25	<25	<25	<25	₹ 25
Methylene Chloride	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	< 25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	2 5
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	67
Carbon Tetrachloride	163	81	<25	<25	<2 5	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Dibromochloromethene	<25	<25	<25	<25	<25	<25
Tetrachloroethene	18 1	63	25	<25	390	802

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Client Sample ID:	B1DDX8	B1DDX9	B1DDY0	BIDDY1	B1DDY2	B1DDY3
Project Number:	EM1770	EM1770	EM1770	EM1770	EM1770	EM1770
Lab File ID:	05071220	05071221	05071222	05071223	05071224	05071225
Received Date:	7/8/2005	7/8/2005	7/8/2005	7/8/2005	7/8/2005	7/8/2005
Analysis Date:	7/12/2005	7/12/2005	7 /1 2/20 05	7/12/2005	7/12/2005	7/12/2005
Analysis Time:	19:29	20:00	20:31	21:01	21:32	22:03
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS						····
Chloroethane	<25	<25	<25	<25	<25	<25
Chloromethane	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
Methylene Chloride	<25	<25	⊲ 25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	54	28	<25	<25	<25	687
Carbon Tetrachloride	<25	<25	<25	<25	<25	25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Dibromochloromethane	<25	<25	· <25	<25	<25	<25
Tetrachloroethene	852	635	181	781	260	386

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Client Sample ID:	B1DDY4	METH_BL	BIDDY5	BIDDY6	B1DDY7	BIDDY8
Project Number:	EM1770	EM177 0	EM177 0	EM1770	EM1770	EM1770
Lab File ID:	05071226	05071229	05071230	05071231	05071232	05071233
Received Date:	7/8/2005		7/8/2005	7/8/2005	7/8/2005	7/8/20 05
Analysis Date:	7/12/2005	7/13/2005	7/13/2005	7/13/2005	7/13/2005	7/13/2005
Analysis Time:	22:33	0:05	0:36	1:06	1:37	2:08
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS						
Chloroethane	<25	<25	<25	<25	<25	<25
Chloromethane	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
Methylene Chloride	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<2.5	<25	< 25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	35	<25	<25	<25
Carbon Tetrachloride	111	<25	231	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Dibromochloromethane	<25	<25	<25	<25	<25	<25
Tetrachloroethene	511	<25	839	160	196	119

Table 1

Beacon Environmental Services, Inc. 323 Williams Street, Ste. D Bel Air, MD 21014

Client Sample ID: H	31DDY9 Trip-8
Project Number:	EM1770
Lab File ID:	05071234
Received Date:	7/8/2005
Analysis Date:	7/13/2005
Analysis Time:	2:38
Units:	ng/trap
COMPOUNDS	
Chloroethane	<25
Chloromethane	<25
1,1-Dichloroethene	<25
Methylene Chloride	<25
trans-1,2-Dichloroethene	<25
1,1-Dichloroethane	<25
cis-1,2-Dichloroethene	<25
Chloroform	<25
1,2-Dichloroethane	<25
1,1,1-Trichloroethane	<25
Carbon Tetrachloride	<25
1,2-Dichloropropane	<25
Trichloroethene	<25
1,1,2-Trichloroethane	<25
Dibromochloromethane	<25
Tetrachloroethene	<25

Attachments

Attachment 1

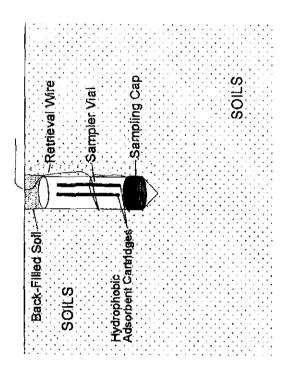
FIELD PROCEDURES FOR PASSIVE SOIL-GAS SURVEYS

The following field procedures are routinely used during a BEACON Passive Soil-Gas Survey. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

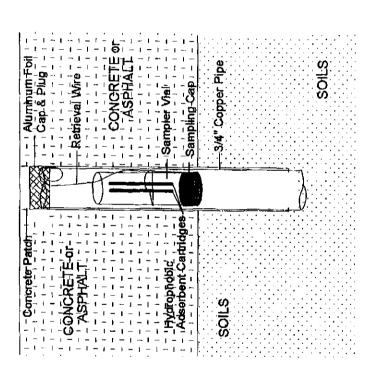
- A. Field personnel carry system components and support equipment to the site and deploy the passive samplers in a prearranged survey pattern. A passive sampler consists of a glass vial containing hydrophobic adsorbent cartridges with a length of wire attached to the vial for retrieval. Although samplers require only one person for emplacement and retrieval, the specific number of field personnel required depends upon the scope and schedule of the project. Each Sampler emplacement generally takes less than two minutes.
- B. For those sample locations covered with soils or vegetation, a field technician clears vegetation and debris exposing the ground surface. Using a hammer and a ¾"-diameter pointed metal stake, the technician creates a hole approximately three inches deep. For those locations covered with an asphalt or concrete cap, the field technician drills a 1½"-diameter hole through the cap to the soils beneath. (If necessary, the sampler can be sleeved with a ¾" i.d. copper pipe for either capped or uncapped locations).
- C. The technician then removes the solid plastic cap from a sampler and replaces it with a Sampling Cap (a plastic cap with a hole covered by screen meshing). The technician inserts the sampler, with the Sampling Cap end facing down, into the hole (see attached figure). The sampler is then covered with either local soils for uncapped locations or, for capped locations, aluminum foil and a concrete patch. The sampler's location, time and date of emplacement, and other relevant information are recorded on the Field Deployment Form.
- D. One or more trip blanks are included as part of the quality-control procedures.
- E. Once all the passive samplers have been deployed, field personnel schedule sampler recovery and depart, taking all other equipment and materials with them.
- F. Field personnel retrieve the samplers at the end of the exposure period. At each location, a field technician withdraws the sampler from its hole, removes the retrieval wire, and wipes the outside of the vial clean using gauze cloth; following removal of the Sampling Cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sample location number is written on the label. The technician then records sample-point location, date, time, etc. on the Field Deployment Form.
- G. Sampling holes are refilled with soil, sand, or other suitable material. If Samplers have been installed through asphalt or concrete, the hole is filled to grade with a plug of cold patch or cement.
- H. Following retrieval, field personnel ship or carry the passive samplers to BEACON's laboratory.

BEACON PASSIVE SAMPLER

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



Attachment 2

Field Deployment Reports

79 end of rope PASSIVE SOIL-GAS SURVEY FIELD DEPLOYMENT REPORT

Project Information				
Beacon Project No.: EM1770 Task 3				
Site Name:	218-W-3A Burial Ground			
Site Location:	200-PW-I OU, Hanford, WA			



Client Information					
Company Name: Fluor Hanford, Inc.					
Office Location:	Richland, WA				
Samples Collected By:					

One Eccation.	2001 11 10	o, Hallord, WA	323 Williams Street, Sulte D, Bel Air, MD 21014, 800-878-5510
FIELD SAMPLE ID	Date Emplaced 6/3\psi/\psi 5 Time Emplaced	Date Retrieved 05/JUL/05 Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, sampling hole depth, cartridge/vial condition)
195 #2	0906	0855	BIDOW5
#3	6908	0857	BIDDW6
#4	0911	0901	BLODWZ
#5	0913	0904	BIDDM8
#6	771 5	0907	B/DD W9
	717	0910	BIDD XØ
#8	0919	0912	BIDDXI
#9	0921	0915	BIDDXZ
#9D	0921	0917	BIDD X3
#	0925	0920	BIDD XY
#10	Ø927	0925	BIDD X5 SAMPLE PULLED OUT OF GROUND
			appears eighte or other animal
			pulled it out.

PASSIVE SOIL-GAS SURVEY FIELD DEPLOYMENT REPORT

FIELD	Date Emplaced	Date Retrieved	FIELD NOTES
SAMPLE ID	30 JUN05	0550105	(e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
	Time Emplaced	Time Retrieved	
TØ6 #2	Ø938	0936	BIDDXE
#13	Ø939	0940	BIODX 7
#4	941	0942	BIDDX8
#5	Ø943	0944	BINDX9
#6	0944	0947	BIDDYO
#7	0946	0949	BIODYI
#8	Ø947	0952	BIDDYZ
#9	\$949.	0953	BIDDY3
#10	\$95\$	0956	BIOD YY
#10D	Ø951	0958	B(O) Y5
#11	Ø953	0959	BIDD YE
#17	Ø955	1001	BIDDY7
#1	Ø959	(00j	BIDDY8
			1

0100016

Page _____ of ____

Attachment 3

LABORATORY PROCEDURES FOR PASSIVE SOIL-GAS SAMPLES

Following are laboratory procedures used with BEACON Passive Soil-Gas Surveys, a screening technology for expedited site investigation. After exposure, adsorbent cartridges from the passive samplers are analyzed using U.S. EPA Method 8260B as described in the Solid Waste Manual (SW-846), a capillary gas chromatographic/mass spectrometric method, modified to accommodate high temperature thermal desorption of the adsorbent cartridges. This procedure is summarized as follows:

- A. The adsorbent cartridges are loaded with internal standards and surrogates prior to loading the autosampler with the cartridges. The loaded cartridges are purged in a helium flow. Then the cartridges are thermally desorbed in a helium flow onto a focusing trap. Any analytes in the helium stream are adsorbed onto a focusing trap.
- B. Following trap focusing, the trap is thermally desorbed onto a DB-VRX 60m, 0.25 mm ID, 1.40 micron film thickness capillary column.
- C. The GC/MS is scanned between 35 and 270 Atomic Mass Units (AMU) at 3.12 scans per second.
- D. BFB tuning criteria and the initial five-point calibration procedures are those stated in method SW846-8260B. System performance and calibration check criteria are met prior to analysis of samples. A laboratory method blank is analyzed after the daily standard to determine that the system is contaminant-free.
- E. The instrumentation used for these analyses includes:
 - Agilent 6890-5973 Gas Chromatograph/Mass Spectrometer;
 - Markes Unity thermal desorber;
 - Markes UltrA autosampler; and
 - Markes Mass Flow Controller Module.

Attachment 4

Chain-of-Custody Forms

}	Fluor	Hanford Inc.	CHAIN	OF CUSTOR	OY/SAMPLE ANALYSIS	REQUEST		F05-025-023		PAGE 1 OF 5
COLLECTOR	·		COMPANY CONTACT	TE	LEPHONE NO.	PROJECT C	OORDINATOR	PRICE CODE	9N	DATA
GENT, PM			TRENT, SI		373-5869	TRENT, SJ		, redu boss	3.1	TURNAROUND
SAMPLING	LOCATION		PROJECT DESIGNATION			SAF NO.		AIR QUALITY		45 Days / 45 Days
218-W-3A, 6	M1770 Task 3		Carbon Tetrachioride Passive Soil	Gas Sampling	9	F05-02S				
ICE CHEST	201#	2424536	FIELD LOGBOOK NO.		COA 119152ES20	METHOD OF	F SHIPMENT (PRESS			
SHIPPED TO)	<i>N</i> 1007	OFFSITE PROPERTY NO.	-000	`	BILL OF LA	DING/MER BI	LLNO.		
Beacon Envi	ronmental Serv	rices	SUPTK 1	5880	2	つ	e PI	(17880	<u> </u>	
MATRIX* A=Air DL=Drum]	E SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool 4C						
Liquids DS=Drum Solids	radiologic	lid not originate in al controlled area. No total sociated with	TYPE OF CONTAINER	EMFLUX Cartridge						
L=Liquid C=0i) S=Soil SE=Sediment	sample/sam		NO. OF CONTAINER(S)	1						
Sc=Sediment T=Tissue V=Vegitation W=Water			VOLUME	5g						
Wi≈Wipe X=Other	SPECIAL	HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 82608 (Exifica);						
SAM	PLE NO.	MATRIX*	SAMPLE DATE SAMPLE TIME							
B1DDW5		OTHER SOLID	053010501855	X						
31DDW6		OTHER SOLID	7/5/05 0057	X	+					
91DDW7		OTHER SOLID	7/5/05/09/01	X		- -				
31DDW8		OTHER SOLID	7/5/050904	X						
31DDW9		OTHER SOLID		X						
	OCCUPATION .	OTTEN GOLD	05 JUL 05 09 0 7 SIGN/ PRINT NAMES			SPECIAL INSTR	UCTIONS			_!
CHAIN OF P	OSSESSION						••••			
RELINQUISH PMG-EN	T/ Pon	7/5/05 1/45	RECEIVED BY/STORED IN	7/5/0	S 1145					
MO-C	DU B	1 2/7/05 DISO	THE BUTTE	Bail	WH71880050				•	
MIG		17 Why 7/7/05 045	RECEIVED BY STORED IN		DATE/TIME					
RELINQUISH	ED BY/REMOVE	ED PROM DATE/TIME	RECEIVED BY/STORED IN		DATE/TIME					
RELINQUISH	ED BY/REMOVI	ED FROM DATE/TIME	RECEIVEO BY/STORED IN		DATE/TIME					
RELINQUISH	ED BY/REMOVI	ED FROM DATE/TIME	RECEIVED BY/STORED IN		DATE/TIME					
RELINQUISH	ED SY/REMOV	ED FROM DATE/TIME	RECEIVED BY/STORED IN		DATE/TIME					
LABORAT SECTIO	ORY REC	Ryan Schick				TITLE		7-8-20	205 /	DATE/TIME 0900
FINAL SAI DISPOST	MPLE DIS	POSAL METHOD				DISPOSED BY				DATE/TIME

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A-6003-618(03/03)

	Fluo	r Hanford Inc.		(CHAIN	OF CUSTO	DY/SAMPLE A	NALYSIS R	EQUEST			F05-025-023		PAGE 2	OF 5
COLLECTOR	-			COMPANY CON	TACT	TE	LEPHONE NO		PROJECT	COORDINATO	OR _	PRICE CODE		. , 	DATA
GENT, PM				TRENT, SJ			373-5869		TRENT,	S)		FRICE CODE	9N		INAROUN
SAMPLING L	LOCATION			PROJECT DESIG					SAF NO.			AIR QUALITY			Days / Days
218-W-3A, E		3		Carbon Tetrachie		Gas Samplin			F05-025						- Days
ICE CHESTA	gal #	00/2453	K.	FIELD LOGBOO	K NO.		119152E52	0	FEDERAL	OF SHIPMEN					
SHIPPED TO)			OFFSITE PROP	ERTY NO	1 6	(XX)		BILL OF	LADING/AIR I	TIL NO	1KCK	~		
Beacon Envir	ronmental Se	rvices		21	<u>x YIC</u>	15	882		_	2U 1		1588	لم ا		
MATRIX* .=Air)L=Drum	POSSIB	LE SAMPLE HAZARDS	/ REMARKS	PRESER	NOTTON	Cool 4C									
iouids S=Drum olids	Samples d	lid not originate in		TYPE OF C	ONTAINER	EMFLUX Cartridge									
=Liquid =Oli =Soil E=Sediment	radiologic activity as sample/sa	al controlled area. No a sociated with moles.	total	NO. OF COI	NTAINER(S)	1									
-Tissue -Vegitation -Water	-			VOL	ÜME	5g									
∏∞Wipe ⇒Other	SPECIA	L HANDLING AND/O	R STORAGE	SAMPLE A	ANALYSIS	VOA - 82608 (Eunikux);									
CAMP	LE NO.	MATRI	Brit	SAMPLE DATE	CALEM E TIM						}				
DDX0		OTHER SOLID				_;							i -		
				053VL05		_X_		-	_		 		-		
IDDX1		OTHER SOLID			+	⊥X_					ļ	 			
IDDX2		OTHER SOLID		7/5/05	0915	- X -	_	 			<u> </u>		 		
IDDX3		OTHER SOLID		7/5/05	091/	_X_					<u> </u>		ļ		
IDDX4		OTHER SOLID	· · · · · · · · · · · · · · · · · · ·	05JULOS	0470	<u>'\</u>							<u> </u>		
HAIN OF PO	OSSESSION			SIGN/ PRIN	T NAMES			S	PECIAL INST	TRUCTIONS					
ELINQUISHE PMG-EN ELINQUISHE NO-Q ALINQUISHE LH-QUI		FROM 7/SI TO FROM 7/SI TO FROM 7/125 OFFICE DULL NUT	DATE/TEME 05 1/4 DATE/TEME PATE/TEME PATE/TEME PATE/TEME	RECEIVED BY/	TT /	Bully	OS DATE	145 150 TIME							
ELINQUISHE	D BY/REMOV	ED FROM	DATE/TIME	RECEIVED BY/			DATE								
	D BY/REMOV		DATE/TIME	RECEIVED BY/	STORED IN		DATE/								
	D BY/REMOV		DATE/TIME	RECEIVED BY/		·	DATE/								
EFTMÖNTZHE	D BY/REMOV	- <u>-</u> -	DATE/TIME	RECEIVED BY/	STORED IN		DATE								
LABORATO	ORY REC	Ryan Sch	ed				 -	Ť	TILE				7-8-7	DATE/TIME	0900
									ISPOSED BY					DATE/TIME	

A-6003-618(03/03)

1	Fluor	Hanford Inc.	ļ	CHAIN	OF CUSTO	DY/SAMPLE A	NALYSIS	REQUEST		F05-025-023	PAGE 3 C	OF 5
COLLECTO	R		COMPANY CON	TACT	TE	LEPHONE NO		PROJECT (COORDINATOR	PRIOR CODE ON	DAT	ΓA
GENT, PM			TRENT, SJ			373-5869		TRENT, S		PRICE CODE 9N	TURNAF	
SAMPLING	LOCATION		PROJECT DESIG	NOTTANE				SAF NO.		AIR QUALITY	45 Da	
218-W-3A,	EM1770 Task 3		Carbon Tetrachi	oride Passive Soil	Gas Samplin	g		F05-025			45 D	ays
ICE CHEST	a #	Q)424536	FIELD LOGBOO	_		119152ES20)	FEDERAL E				
SHIPPED TO Beacon Env	o Ironmental Serv	rices	OFFSITE PROP	BROWN 10	777	-		BILL OF LA	DINGALE BELL	(15882		
MATRIX*	POSSTBLI	E SAMPLE HAZARDS/ REMARKS		VATION	Cool 4C		7			K 15000		
DL=Drum Uguids DS=Drum Solids		not originate in controlled area. No total	TYPE OF C	ONTAINER	EMFLUX Cartridge		-					<u>-</u>
L=Liquid O=OII S=Soil SE=Sediment	sample/sam		NO. OF COI	NTAINER(S)	1	-						
T≔Tissue V=Vegitation W=Water			VOL	UME	5g							<u></u>
X=Other	SPECIAL	HANDLING AND/OR STORAGE	SAMPLE	ANALYSIS	VOA - 82608 (Eraflux);							
SAM	PLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME								
B1DDX5		OTHER SOLID	OSJULOS	0925	X							
B1DDX6		OTHER SOLID	7/5/05	0936	X	 	1					
B1DDX7		OTHER SOLID	7/8/05	0940	V		<u> </u>		† - - -			
B1DDX8		OTHER SOLID	7/0/05	cay 2	\ \		-		1			
B1DDX9		OTHER SOLID	OF THE	0944	 		-					
<u> </u>	POSSESSION		SIGN/ PRIN	I NAMES	<u> </u>		<u> </u>	SPECIAL INSTR	UCTIONS			
<u> </u>	D BY REMOVE PMED D BY DESSEVE ED BY REMOVE		RECEIVED BY/		Bain	DATE/T	TIME 45 DIME)				
RELINQUISH	ED BY/REMOVE	D FROM DATE/TYME	RECEIVED BY	STORED IN		DATE/1	TIME					
RELINQUISH	ED BY/REMOVE	D FROM DATE/TIME	RECEIVED BY/	STORED IN		DATE/1	ITME					
RELINQUISH	ED BY/REMOVE	D FROM DATE/TIME	RECEIVED BY/	STORED IN		DATE/1	TIME					
RELINQUISH	ED BY/REMOVE	D FROM DATE/TIME	RECEIVED BY/	STORED IN		DATE/	TME					
	LABORATORY SECTION RECEIVED BY RECEIVED BY Ryan Scherol							TITLE		7-8-2005	DATE/TIME	
FINAL SAI	MPLE	OSAL METHOD						DISPOSED BY			DATE/TIME	ļ

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i i	Fluo	r Hanford Inc.	CHAIN	OF CUSTO	DY/SAMPLE A	ALYSIS	REQUEST		F05-025-023	1 4	PAGE 4 OF 5
COLLECTOR GENT, PM	L		COMPANY CONTACT TRENT, SJ		EL EPHONE NO. 373-5869		PROJECT (COORDINATOR	PRICE CODE	9N	DATA TURNAROUND
SAMPLING	LOCATION		PROJECT DESIGNATION				SAF NO.		AIR QUALITY		45 Days / 45 Days
218-W-3A, E	M1770 Task :	3	Carbon Tetrachioride Passive Soil	Gas Samplin	g	_	F05-025	<u>-</u>			
ICE CHEST	" #0	4042453C	FIELD LOGBOOK NO.		119152ES20		METHOD (OF SHIPMENT EXPRESS			·
SHIPPED TO)		OFFSITE PROBERTY NO.	***	77		BILL OF L	DING/AIR BILL P	D. 10-181		
Beacon Envi	ronmental Ser	vices	DUVIL	1288	2		- 4	24 V/K	15842		
MATRIX* A=Air DL=Drum		E SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool 4C							
Liquids DS=Drum Solids	radiologic	lid not originate in al controlled area. No total sociated with	TYPE OF CONTAINER	EMFLUX Cartridge						l	
L=Liquid O≠Oll S=Soil SE=Sediment	sample/sp		NO. OF CONTAINER(S)	1							
T=Tissue V=Vegitation W=Water	1		VOLUME	5 <u>a</u>							
WI=Wipe X=Other	SPECIA	LHANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 82608 (Emflux);							
SAMI	PLE NO.	MATRIX*	SAMPLE DATE SAMPLE TIME			_					
B1DDY0		OTHER SOLID	05JUL05 0947	V	,						
B1DDY1		OTHER SOLID	7/5/05/0949	+					·		
B1DDY2		OTHER SOLID	7/5/05 0952	12				 			
B1DDY3		OTHER SOLID	7/5/05 095 3	 ◊							1
B1DDY4		OTHER SOLID	05504050956	+	- 	<u> </u>		 - -			
CHAIN OF P	OCCERCION	<u> </u>	SIGN/ PRINT NAMES			L -	SPECIAL INSTR	HETIONS			
RELINQUISHI PMG-EN RELINQUISHI MO-OC ANTENDUSHI ANTENDUSHI	ED BY/REMOV	ED PROM DATE/TIME 7/6/09 1/4 ED PROM DATE/TIME 7/7/05 9/50 PROM JATE/TRUM	RECEIVED BY/STORED IN RECEIVED BY/STORED IN RECEIVED BY/STORED IN	7/3/9	S DATE/T	45 0750	i				
RELINQUISH	D BY/REMOV	ED PROM DATE/TIME	RECEIVED BY/STORED IN	<u>-</u>	DATE/T	tme ami					
RELINQUISH	D BY/REMOV	ED FROM DATE/TIME	RECEIVED BY/STORED IN		DATE/T	IME					
RELINQUISHI	D BY/REMOV	ED FROM DATE/TIME	RECEIVED BY/STORED IN		DATE/T	IME					
RELINQUISH	D BY/REMOV	ED FROM DATE/TIME	RECEIVED BY/STORED IN		DATE/T	IME					
LABORATO SECTIO	JRT	PLYAN Schide					TITLE		7-1	3-2005	/ 0900
FINAL SAN DISPOSIT	IPLE	POSAL METHOD					DISPOSED BY			DA	TE/TIME

	Fluor	lanford Inc.		CHAIN	OF CUSTOE	Y/SAMPLE A	NALYSIS	REQUEST		F05-025-023	PA	GE 5 OF 5
COLLECTOR			COMPANY CON	TACT	TE	LEPHONE NO	· · · · · · ·	PROJECT	COORDINATOR	PRICE CODE		DATA
GENT, PM			TRENT, SJ			373- 58 69		TRENT, S	נ	PRICE CODE	9N	TURNAROUND
SAMPLING L	OCATION		PROJECT DESIG	SNATION				SAF NO.		AIR QUALITY		45 Days / 45 Days
218-W-3A, El	41770 Task 3		Carbon Tetrachk	oride Passive Soil	Gas Sampling)		F05-025				45 Days
ICE CHEST-N	1 #	20424536	FIELD LOGBOO	K NO.		119152ES20	ı	FEDERAL	OF SHIPMENT EXPRESS			
SHIPPED TO Beacon Enviro	onmental Servi	ces	OFFSITE PROP	ERTY NO	158	72		BILL OF L	ADING/AIR BILL N	. 15882)	
MATRIX* A=Alr	POSSTBLE	5AMPLE HAZARDS/ REMARKS	PRESER	EVATION	Cool 4C					_ : 3 00 0		
OL=Drum Liquids OS=Drum Solids	diological	not originate in controlled area. No total	TYPE OF C	ONTAINER	EMFLUX Cartridge	 	 					
L=Liquid O=Oil S=Soil SE=Sediment	activity asso sample/sam	ciated Willi		NTAINER(S)	1 59							
T=Tissue V=Vegitation W=Water WI=Wipe			VOL	E								
X=Other	SPECIAL I	fandling and/or storage	SAMPLE A	analysis	YOA - 82608 (Emflux);							
SAMP	LE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	<u> </u>							
B1DDY5	····	OTHER SOLID	05JVL05	0958	γ							
B1DDY6		OTHER SOLID	7/5/05	0959	1		<u> </u>					
B1DDY7		OTHER SOLID	7/5/05		+2							
B1DDY8		OTHER SOLID	7/5/05	1003	\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>		 					
B1DDY9		OTHER SOLID	05JUL05	JUB CO	1 A	 -	 		 			
CHAIN OF PO	PERFERM		SIGN/ PRINT	LATES	<i>Y</i> }		<u> 1 — т</u>	SPECIAL INST	RUCTIONS			
RELINQUISHER PARTICULARIES PERTINGUISHER RELINQUISHER	Projection of the control of the con	17905 1145 17195 0458 1100 WW 777000	RECEIVED BY/	STORED IN STORED IN STORED IN STORED IN	. Build	/S/PATE/J	45 0150 IME					
RELINQUISHE	BY/REMOVE	FROM DATE/TIME	RECEIVED BY/	STORED IN		DATE/T	IME					
RELINQUISHE	BY/REMOVE	FROM DATE/TIME	RECEIVED BY	STORED IN		DATE/T	IME					
RELINQUISHE	BY/REMOVE	FROM DATE/TIME	RECEIVED BY/	STORED IN		DATE/T	IME					
LABORATO SECTION	K1	VED BY Ryan Schid						TITLE		7-8-29	x05 /	E/TIME D9DD
FINAL SAME DISPOSITI	PLE	SAL METHOD					<u> </u>	DISPOSED BY			DATE	E/TIME
A-6003-618(03/0	3)	7.707										

CHAIN-OF-CUSTODY PASSIVE SOIL-GAS SAMPLES

Pr	oject Information
Beacon Project No.:	EM1770 Task 3
Site Name:	218-W-3A Burial Ground
Site Location:	200-PW-1 OU, Hanford, WA
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1770



Clie	nt Information	
Company Name:	Fluor Hanford, Inc.	
Office Location:	Richland, WA	
Samples Submitted By:		
Contact Phone No.:		

Beacon Project Number EM1770 Target Compound List Comments Lab Sample ID Field Sample ID (only necessary if problem or discrepancy) (for lab use only) Condition of sample or vial Time Initial Date Trip-8 Shipment of Field Kit to Site — Custody Seal # 00424531 Intact? Weinsteilled by Curren Ryan Scheid 5-19-2005 FEDEN 1300 Shipment of Field Kit to Laboratory — Custody Seal # M.A. Previous Date/Same Ryan Echid 7-8-2005 0900

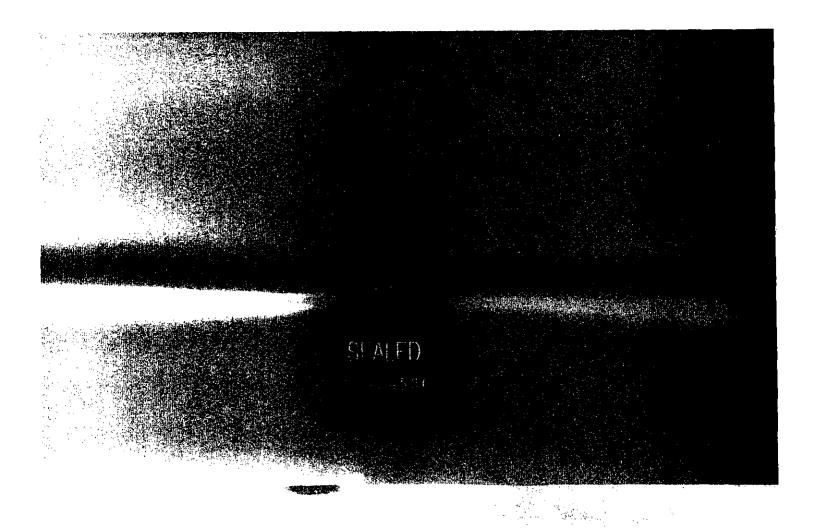
Personnel not available to relinquish samples from MO-026 Ref# 1 on 7 / 7 / 00

Page _ _ of _ 2

000024

			PROJEC	PARTS	AND TOOLS RETURN (FORD, 2355 STEVENS DR., R	PTR) FORM ICHLAND, WA	99354	
REFERE	NCE BUS	NESS PROC	ESS GUIDE	- MATER	AL RETURNS	!		
			· · · · · · · · · · · · · · · · · · ·			on .		
Company	, FH	. · ·	hate 07/0	7/200	Contract Specialist Name		4	PTR No.
					N/A	<u> </u>		15882
			•		Phone Number N/A			
	7		\$ - * ·		_ Tribite retirine c	N Nama		1 1 1
		100				i Haille		Total Pieces
3		/A +						
Other N	/A							1 1 2 2 3 3 3 3 3
Line Item No.	Quantity	U/M Level						
<u>.</u>	1 -	EA				INER POLY	N/F	N/A
						i		
ı				MBER (0424536			
	ERECNCE BUSINESS PROCESS GUIDE - MATERIAL RETURNS Date 27/07/2005 Contract Specialist Name PTR No. 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2							
	PROJECT HANFORD, 2356 STEVENS DR., RICHLAND, WA 99354 FERRINCE BUSINESS PROCESS GUIDE - MATERIAL RETURNS SECTION A - Material information Certar de focusing is REQUIRED: All Date 97/97/2005 SECTION A - Material information Certar de focusing is REQUIRED: All Date 97/97/2005 All Date 97/97/2005 SECTION B - Financial Transaction Information Certar Large No. N/A Phone Number N/A Phone N/A Phone N/A Phone N/A Phone N/A Phone N/A Phone Number N/A Phone N							
! !						i		
-					ECTION B - Financial Transaction In	oformation		
Passpor	t Purchas	e Order Finar	rcial Transac				nsaction Created from	PTR
,					_	Card C	Core Charge - Return	n for Credit of Deposit
					iquired ORepair	C	Replace ,	
						d Materials,) Ship Waste/Material	for Disposa
Ret	um - QA-1	Ion-NCR!Mate	erial (Credit)			~	Over Shipment	
*Requin	s identific	ation of contro	lling Purcha	se Order,	contract, Containers, Sampl	les, etc.		
propert	λ ¦υ αισσο ια	ance with Re	onistiona.	or the Gov	OTHER			
	i	· !			SECTION C - Hazardous Material Im	formation		
Hazerdo	ous Materi		Yes* 📵 N	o TAP	nspections (red'd) Yes 🔘 No	Certified Fpee of	Contamination 🔘 🏵	Yes O No
Radioad	tive Mater		Yes" 🌘 N	to Inclut	appropriate shipping document.	Certifier's/Name/		7/2/5
Rad. Co	ntrol Surv	ey O	Yes 💿 N	to Radio		11/4	. 1/WWW	(1)
Cuetodi	en M. A	BARCHI	ER ·			: • • • • • • • • • • • • • • • • • • •		
					MO-026 7, 300	* · · · · · · · · · · · · · · · · · · ·		07/07/2005
Telepho	ine: 509	-221-063					· · · · · · · · · · · · · · · · · · ·	
					·	DITION UNIO	ODD THE	
Ship To	BEAC	ON ENVIRO	ONMENTAL	SERV.	CES, INC. Contractor	PLOOR HANE	ORD, INC.	1 17
	C/D	SAMPLE RI	CEIVING	<u> </u>		2355 STEVE	NS DRIVE .	
	323 1	WILLIAMS,	SUITE	D		RICHLAND,	WA 99354	
	BEL .	AIRE, MO	21014			·		
					· ·	ATTN: MIKE	BAECHLER.300	, мо-026
	. PYEM	SCHNETO	ER					
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F,Q.B.					PROTION E Phinains because	Toba Islanta	ALE - MORE DIONI	n Notice information
ltem	 -				completed by Shipping Department			rocurement
1	100	M8200	119152	ES20	Routing FrE overnight	By!_	Ofin Eus	<u> </u>
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	1			/ !	B/L No. ・ /ツ/ノニー &コレン "ズ/	256 Date Shi	ipped/ だひゃ	5
		;			15100			
		:			15100	OSDAD		

A-6001-535 (03/05)



From: Origin ID: (509)376-7768 SHIPPING DEPT FLUOR HANFORD 2355 STEVENS DR BLDG 1162

RICHLAND, WA 99352

SHIP TO: (800)878-5510 BILL SENDER **RYAN SCHNEIDER** BEACON ENVIRONMENTAL SERVICES, INC. 323 WILLIAMS, SUITE D **SAMPLE RECEIVING PTR15882** BEL AIRE, MD 21014

Ship Date: 07JUL05 Actual Wgt: 10 LB System#: 5851985/INET2000 Accoun#: S *******

REF: M8200 119152 ES20





PRIORITY OVERNIGHT

FRI

7911 2903 2056 TRK#

Deliver By: 08JUL05

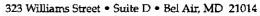
AA BWI

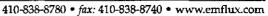
21014 -MD-US





SAMPLING TASK NO. 3 200-PW-1 OPERABLE UNIT Sample Delivery Group BEACON0003







NARRATIVE

Laboratory Name:

BEACON Environmental Services, Inc. (BEACON)

Sample Receipt Date:

7/8/2005

Sample Delivery Group:

BEACON0003

Project:

200-PW-1 Operable Unit Passive Soil Gas Sampling and Analysis

Contract No. 26796

Project Code:

EM1770

Results for the following samples are included in this data package

Sample ID	Matrix	Analysis
1 B1DDW5		tridge OTHER-8260B
2 B1DDW6	EMFLUX® Car	tridge OTHER-8260B
3 B1DDW7	EMFLUX® Can	tridge OTHER-8260B
4 B1DDW8	EMFLUX® Car	tridge OTHER-8260B
5 B1DDW9	EMFLUX® Can	tridge OTHER-8260B
6 B1DDX0		tridge OTHER-8260B
7 B1DDX1		tridge OTHER-8260B
8 B1DDX2		tridge OTHER-8260B
9 BIDDX3		tridge OTHER-8260B
10 B1DDX4	I	tridge OTHER-8260B
11 B1DDX5	EMFLUX® Car	tridge OTHER-8260B
12 BIDDX6	EMFLUX® Car	tridge OTHER-8260B
13 BIDDX7		tridge OTHER-8260B
14 B1DDX8		tridge OTHER-8260B
15 B1DDX9		tridge OTHER-8260B
16 B1DDY0	EMFLUX® Car	tridge OTHER-8260B
17 B1DDY1	EMFLUX® Car	tridge OTHER-8260B
18 B1DDY2	EMFLUX® Car	tridge OTHER-8260B
19 B1DDY3	EMFLUX® Car	tridge OTHER-8260B
20 B1DDY4		tridge OTHER-8260B
21 B1DDY5		tridge OTHER-8260B
22 B1DDY6		tridge OTHER-8260B
23 B1DDY7		tridge OTHER-8260B
24 B1DDY8		tridge OTHER-8260B
25 B1DDY9 Trip-8	EMFLUX® Car	tridge OTHER-8260B

Method 8260B

The samples were analyzed for a custom target compound list following EPA Method 8260B. The method was modified by using thermal desorption to introduce the sample, and using a 30% RSD acceptance criteria for linear calibration for targeted analytes. Documentation of internal standards and surrogate recoveries, as well as established limits, are specified in BEACON's Quality Assurance Program Plan (QAPP) for the Analysis of Soil-Gas Samplers Collected with the EMFLUX® Passive Soil-Gas System.

Target Compounds

CAS#	Compounds
75-00-3	Chloroethane
74-87-3	Chloromethane
75-35-4	1,1-Dichloroethene
75-09-2	Methylene Chloride
156-60-5	trans-1,2-Dichloroethene
75-34-3	1,1-Dichloroethane
156-59-2	cis-1,2-Dichloroethene
67-66-3	Chloroform
107-06-2	1,2-Dichloroethane
71-55-6	1,1,1-Trichloroethane
56-23-5	Carbon Tetrachloride
78-87-5	1,2-Dichloropropane
79-01-6	Trichloroethene
79-00-5	1,1,2-Trichloroethane
124-48-1	Dibromochloromethane
127-18-4	Tetrachloroethene

Practical Quantitation Levels (PQL)

As noted in BEACON's QAPP, the PQL for all analytes is 25 nanograms (ng) for purposes of uniformity in reporting.

Blank Contamination

The following table provides the identification for the preparation blank, method blanks, and trip blanks that were analyzed in conjunction with the samples from delivery group number BEACON0003.

Sample ID	Lab File ID	Analysis Date
Prep Blank	05052510.D	5/26/2005
Method Blank	05071206.D	7/12/2005
Method Blank	05071229.D	7/13/2005
B1DDY9 Trip-8	05071234.D	7/13/2005

Compounds identified on field samples, trip blanks, and laboratory control samples that were also identified on the associated batch method blank are qualified with a "B." No compounds were identified on any of the prop, method, or trip blank at or above the practical quantitation level.

Calibration Verification

The Continuing Calibration Verification values for the target analytes were all within ±30% of the true value as defined by the initial calibration and met the requirements specified in BEACON's Quality Assurance Program Plan.

Demonstrated Linear Range of Instrumentation

An initial five point calibration is performed on the instrumentation from 10 nanograms to 250 nanograms per EMFLUX® cartridge.

Discussion

The quality assurance checks for all samples in Sample Delivery Group: BEACON0003 passed all acceptance criteria.

ALL DATA MEET REQUIREMENTS AS SPECIFIED IN BEACON'S QUALITY ASSURANCE PROGRAM PLAN EXCEPT AS STATED ABOVE. RELEASE OF THE DATA CONTAINED IN THIS HARDCOPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR OR HIS SIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURE:

Steven C. Thornley

Laboratory Director

14 July 2005

Date

Chain-of-Custody/ Sample Analysis Request Forms

-	::Fiuo	r Hanford Inc.	CHAIN	OF CUSTODY/	SAMPLE ANALYS	its request:	F05-025-023	PAGE 1	Of 5
COLLECTOR	·· ·		COMPANY CONTACT	TELEP	HONE NO.	PROJECT COORDINATO	R PRICE CODE	9N	DATA
GENT, PM			TRENT, S)	373	-5869	TRENT, SI		70	RNAROUND
SAMPLING L			PROJECT DESIGNATION			5AF NO. : F05-025	AIR QUALITY		5 Days / 45 Days
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Beacon Envir		vices	S. DTR	15882		301	15882		
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Fluor Hanford Inc.		Manibua tue	CHAIN	UF COSTODY	SAMPLE ANALYSIS	i REQUEST		F05-025-023	PAGE 3 OF 5		
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Fluor Ha	nford Inc.	CHAIN C	of CUSTOD	Y/SAMPLE ANALYS)	s request :	F05-025-023	PAGE 5 OF 5
DILECTOR		COMPANY CONTACT		EPHONE NO.	PROJECT COORDINATO	R PRICE CODE 9N	DATA
BNT, PM		TRENT, S)	3	73-5869	TRENT, SJ		TURNAROUN 45 Days /
IMPLING LOCATION		PROJECT DESIGNATION			SAF NO. F05-025	AIR QUALITY	45 Days
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CHAIN-OF-CUSTODY PASSIVE SOIL-GAS SAMPLES

Pn	oject Information	ADMAGGE	Client Information					
Beacon Project No.:	EM1770 Task 3		Company Name:	Fluor Hanf				
Site Name:	218-W-3A Burial Ground	ENVIRONMENTAL	Office Location:	Richland, V	VA			
Site Location:	200-PW-I OU, Hanford, WA	SERVICES, INC.	Samples Submitted By:					
Analytical Method:	EPA Method 8260B	323 WHITARD Street, Suite D, Rel Ajr, MD 21914, 000-579-5580	Contact Phone No.:					
Target Compounds:	Beacon Project Number EM1	770 Target Compound List						
Field Sample ID	Lab Sample ID (for lab use only)		Comments (only necessary if problem or discreps Condition of sample or vial					
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